

[THIRD EDITION.]

THE VEGETABLE ANÆSTHETIC.

A SAFE AND PLEASANT SUBSTITUTE

—FOR—

ETHER, CHLOROFORM, NITROUS OXIDE,

AND ALL DANGEROUS SUBSTANCES USED TO DESTROY PAIN
IN DENTISTRY AND SURGERY.

DISCOVERED BY DR. U. K. MAYO

378 TREMONT STREET.

APRIL, 1883.

Patented August 29, 1883.

" June 16, 1885.

" Feb. 10, 1885.

The proper Anæsthetic state is one physiologically and psychically
analogous to natural deep sleep.—*J. Y. Simpson, M. D., F. R. S. E., Edin-
burgh, Scotland.*

BOSTON VEGETABLE ANÆSTHETIC CO..

15 Harvard Place, Boston, Mass.

INCORPORATED AUGUST, 1883.

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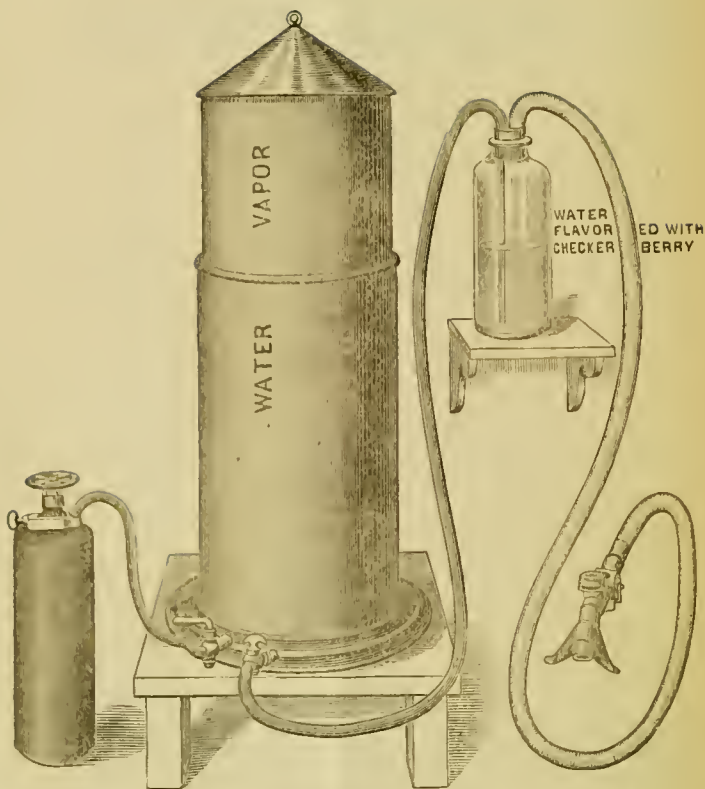
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THE NEW COMBINED BOTTLE AND GASOMETER.

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The advantages of a Gasometer over a Gas-bag must be self-apparent. The Vapor left in a bag, after an operation, soon evaporates; but it will remain in a Gasometer an indefinite time; it is much more convenient and always ready for use.

DIRECTIONS.—Fill the tank to within a few inches of the top with water; balance the upper part of Gasometer, so that a faint bubble will be forced from the water in the bottle.

The Bottle acts as an Indicator, likewise a Stop-valve. No Vapor can escape through the water until inhaled, and should the patient stop inhaling, it is at once detected as the faintest inhalation causes the water in the bottle to bubble.

DIRECTIONS.—Fill the bottle with water sufficient to cover the perforated holes in long glass tube, and flavor slightly with checkerberry. When the patient is an invalid, an aged person, an infant, or afflicted with heart disease or nervous prostration, the water in the Indicator should be invariably changed, as the oxygen contained therein gives vitality to the system.

The use of this Patent Indicator is essential to the successful operation of the anæsthetic. It is the barometer by which the administration of the vapor is adapted to the several descriptions of patients and the varieties of constitutions brought under its influence, modifying the action of the vapor, as it does, on the patient's system, and rendering it perfectly safe and pleasant for all ages and all persons.

The tube to the inhaler must be large enough to admit the vapor so freely that the most nervous, and patients with weak lungs, can inhale through it without exertion. The lungs must be supplied to their natural capacity. The inhaler must be air-tight so that the vapor may be administered free from any atmospheric air. In cases of gentlemen with beards it is difficult to administer the vapor without the admission of air, and a mouthpiece is preferable in their case.

THE VEGETABLE ANÆSTHETIC.

EARLY HISTORY OF ANÆSTHETICS.

EVER since physical pain has been the heritage of the human race men have sought and discovered some means for its alleviation. These were at first simple wines and mollifying substances applied to wounds, as at the siege of Troy the venerable Nestor ministered to the wounded Machaon with a medicated poultice composed of cheese, onions and meal, mixed with wine of Pramuos. The good Samaritan, in the parable, bound up the wounds of the man who had fallen among thieves, "pouring in oil and wine."

Among the ancient Egyptians more potent drugs were used, and by them transmitted to their friends in other lands. Throughout the East, at a very early time, the properties of opium and Indian hemp were well known. The Chinese used the latter as an anæsthetic in the operations of acupuncture. The word *ma-yo**, in their language, signified not only Indian hemp, but anæsthetic medicines generally, of which they possessed considerable knowledge.

Among the ancient Assyrians the pain of circumcision was prevented by compression, during the operation, of the veins of the neck (the carotid arteries), it being believed by the ancients that these were the "seat of

* The reader will notice the singular coincidence between this name and that of Dr. *Mayo*, the discoverer of the new anæsthetic.

drowsiness." The ancient Egyptians also understood the stupifying effects of carbonic acid gas, which they obtained by moistening carbonate of lime with sour wine.

Mandragora, or mandrake root, was the most potent anæsthetic known to the ancient Greeks. Apuleius and Dioscorodes particularly mention its power to produce insensibility lasting for several hours. It was used as an anæsthetic by the surgeons who flourished at the commencement of the Christian era, and its popularity continued until comparatively modern times.

It was a common practice with humane persons to seek the alleviation of the pains of crucifixion by offering malefactors this pain-defying drug. Hence those who stood by the cross offered it to Jesus. (Mark xv. 23.)

ANÆSTHESIA BY INHALATION.

The earliest reference to anæsthesia by inhalation is contained in the writings of Herodotus. This author relates that the Scythians were accustomed to produce intoxication by inhaling the vapor of a certain kind of hemp. This was probably the famous *bhang* or *hasheesh* of the Orientals, to which the most wonderful anæsthetic properties have been ascribed.

Theodoric of Bologna, about the year 1298, taught the "ancient art"—transmitted from generation to generation, and by him learned of Hugo de Lucca,—of preparing a "*spongia somnifera*" for the use of patients who were to undergo surgical operations. This was inhaled from a sponge moistened with warm water, after having been medicated and dried in the sun.

In the early part of the last century, Augustus, King of Poland, underwent amputation while insensible from

the effects of a narcotic drug. This may have been the "volatile essence" described in an old work on natural magic by Jean Baptiste Pesta, which he says was kept in a "leadern vessel hermetically sealed to prevent its volatile part from escaping." The effect of this "essence" was like that of ether, for it is said that the patient became "buried in a sleep so profound that only by great violence could he be aroused.

This substance, whatever it was, seems not to have been generally adopted as an anæsthetic. Opium was employed in later years, and was found one of the best narcotics for the relief of pain and for producing insensibility, but it was not free from danger.

NITROUS OXIDE.

Little progress was really made towards the discovery of a satisfactory anæsthetic till the birth of modern chemistry in the latter half of the last century. With a view to experimenting in the various gases which had been discovered by Scheele, Lavoisier and Priestly, in the cure of consumption by inhalation, Dr. Thomas Beddoes, in 1798, founded a *Pneumatic Institution* at Clifton, near Bristol, England. It was as a young chemist in this institution that Sir Humphrey Davy discovered *nitrous oxide gas*, April 9, 1799. He was soon after called to the Royal Institution in London, where he pursued his exceptionally brilliant career as a chemist. In the year 1800 he recorded his opinion of his great discovery thus :

"As nitrous oxide, in its extensive operations, seems capable of destroying physical pain, it may probably be used with advantage in surgical operations in which no great effusion of blood takes place."

This valuable and practical suggestion remained without fruit for a long time, and surgeons, physicians and accoucheurs still employed alcohol and opium in some of their various forms for purposes of artificial anæsthesia.

It was not until December, 1844, that the attention of the world was again called to nitrous oxide, and this time only in the way of amusement. An itinerant lecturer on chemistry, Dr. Colton, undertook to divert the citizens of Hartford, Conn., with an exhibition of "laughing gas." Dr. Horace Wells, an ingenious dentist of that city, caught the idea, and applied it to the painless extraction of teeth. Since that day nitrous oxide has held a place of more or less importance among the few substances used as anæsthetics in the various departments of surgery and therapeutics.

The principal characteristics of nitrous oxide as an anæsthetic are thus summed up by Professor Lyman in his work :

I. Nitrous oxide possesses special anæsthetic properties.

II. If inhaled without dilution, it produces asphyxia, as well as anæsthesia, by the exclusion of oxygen from the blood.

III. Nitrous oxide does not combine chemically with the blood, but simply dissolves in it; hence its speedy effect and departure from the organism.

IV. Nitrous oxide is not decomposed in the blood; hence it cannot supply oxygen for the respiration of the tissues.

V. Nitrous oxide produces special effects upon the nervous system. When diluted with air, these effects are limited to the manifestation of a peculiar exhilaration. When inhaled without dilution, the gas produce

first, excitement, then anæsthesia, and finally, asphyxia. The ultimate phenomena of asphyxia (convulsions, etc.) are suppressed by the anæsthetic energy of the gas.

VI. These conclusions would leave nitrous oxide in the position of a gas destitute of positive qualities. Its stupefying properties would be purely negative, and dependent on its exclusion of oxygen from the blood. The precipitancy with which the symptoms succeed each other constitute the principal source of danger in the use of nitrous oxide gas. *Pure nitrous oxide is incapable of sustaining animal life, and it must be breathed nearly or quite pure, and therefore cuts off entirely the air supply, and arrests the vital process of oxidation, or æration of blood in the lungs. Under these circumstances, when the store of oxygen which the blood contained at the commencement of the inhalation is exhausted, death must supervene.* The following other serious objections are enunciated in standard works: A tendency to cause cerebral congestion, also to paralysis of the muscles of the mouth, pain in the head, and nausea. Such has been the experience of many of the most conscientious dentists that, after the most careful trials of nitrous oxide, they have felt obliged to give up its use.

ETHER.

In 1785, Dr. Pearson, of Birmingham, England, used sulphuric ether as a means of relief for spasmodic asthma. Dr. Warren, of Boston, made use of inhalations of ether in treating advanced stages of consumption as early as 1805. In 1818 the *Journal of Science and the Arts*, published at the Royal Institution in London, contained the following anonymous communication, since generally attributed to Professor Faraday :

“When the vapor of ether mixed with common air is inhaled, it produces effects similar to those occasioned by nitrous oxide It is necessary to use caution in making experiments of this kind. By the imprudent inspiration of ether a gentleman was thrown into a very lethargic state, which continued, with occasional periods of intermission, for more than thirty hours, and a great depression of spirits; for many days the pulse was so much lowered that considerable fear was entertained for his life.”

Accidents, like this, attending the use of ether, were undoubtedly the cause of the indifference which prevailed towards it as an anæsthetic in the surgical profession for the next quarter of a century.

In 1839 two circumstances occurred which had an important bearing on the development of ether as an anæsthetic. The first of these was the administration of ether to a negro boy merely for amusement, by a number of boys in Anderson, S. C. At first they were frightened, believing that their rash act had really caused the boy's death. But after waiting an hour in consternation, the boy revived, and was apparently no worse for his alarming experience. Three years after, one of the actors in this affair, a young man named Wilhite, became a student in the office of Dr. W. C. Long, of Jefferson, Georgia. Wilhite related to Dr. Long his experience with the negro boy. The Doctor himself had been experimenting with the gas, and was induced by the information furnished by young Wilhite to attempt the removal of a tumor from the neck of a patient while under its influence. This was in March, 1842. The operation was performed without pain, and recovery followed without accident. This first use of ether is a

surgical operation was thus simply recorded in Dr. Long's ledger :—

“James Venable, 1842, ether and excision of tumor, \$2.00.”

The other circumstance to which I have alluded is the following :—

During the year 1839, a young student of chemistry in Rochester, N. Y., viz., William C. Clarke, now a veteran physician of Chicago, was in the habit of entertaining his companions with inhalations of ether. One of the participants in those frolics was no less a person than William T. G. Morton, afterwards the famous dentist who demonstrated the success of ether as anæsthetic in the Massachusetts General Hospital in 1846. Under its influence several tumors were excised and amputation of the thigh performed by Drs. Warren and Haywood. Dr. Bigelow, of Boston, in April, 1848, performed an incision of the breast, using sixty gallons of the gas.

The great discovery of Morton was immediately heralded throughout the civilized world and adopted with marvelous unanimity and enthusiasm in England, France and Germany.

There are many objections to be urged against the use of ether, its disagreeable and very persistent smell, its occasional tendency to mutation of the bronchi during its first inspiration and the large quantity of it occasionally required to be used, it is not uncommon to see even in what should be the expert practice of large hospitals, 4, 6, and even 8 fluid ounces of ether used in the effort to get patients through the stages of intoxication, and a pound or more is not unfrequently consumed in a single operation. These efforts often require ten for

twelve minutes, and then have to be supplemented by the use of one or two strong men to control the patient's struggles. In not a few cases the desired third stage of narcosis is not reached at all. It is very dangerous to those who faint readily, alcohol drinkers, lung complaints, and young children, in not a few cases death takes place.

CHLOROFORM.

Chloroform was discovered in 1831, almost simultaneously by Soubeiran, of France, Liebig, of Germany, and Guthrie, of Sacketts Harbor, N. Y. Its true constitution was discovered by Dumas in 1834. In 1847 the celebrated physiologist Flourens read a paper on experiments in chloroform before the French Academy of Science. He had discovered that animals subjected to the vapor became completely insensible to the most painful operations upon the naked spinal cord and sensitive nerve-roots.

Chloroform was first used as an anæsthetic in surgical operations at St. Bartholomew's Hospital in 1847, under the eminent surgeon Sir William Lawrence. It was recommended as a milder anæsthetic than ether by Michael Cudmore Furnell, a surgical pupil, who had accidentally discovered its properties while a student under Dr. John Bell. In November, 1847, Dr. Simpson read his famous paper before the Medico-Chirurgical Society of Edinburgh, Scotland, which introduced chloroform to the world.

The following table contains a list of all the anæsthetics which have been used in modern times:—

LIST OF ANÆSTHETICS.

Nitrous Oxide Gas.

Carbonic Oxide Gas.

Carbonic Acid Gas.*

Bisulphide of Carbon (Hydride of Methyl, or Marsh Gas).*

Methylic Alcohol.

Methylic Ether Gas.

Ethylie, or Absolute Ether (Sulphuric Ether).

Chloride of Ethyl (Dutch Liquid).

Bromide of Ethylene.

Chloride of Methyl Gas.

Bichloride of Methylene.

Terchloride of Formyl (Chloroform).

Terchloride of Carbon.*

Bromoform.

Heavy Carburetted Hydrogen Gas (Olefiant Gas or Ethylene).*

Bromide of Ethyl (Hydrobromic Ether).

Hydride of Amyl.*

Amylene.*

Benzole.*

Turpentine Spirit.*

Gasoline.*

And all of the liquid Chlorides, Bromides and Iodides of Alcoholic radicals.

The anæsthetics mainly relied upon at the present day may be reduced to four, viz.: Alcohol, Ether, Chloroform and Nitrous Oxide. They can be reduced to a still smaller number, viz.: nitrous oxide gas and alcohol of various grades of power, as each of the eleven alcohols will, by the chemical action of an acid, produce its ether or chloroform.

Chloroform exerts a depressing influence on the heart, and is, therefore, dangerous. Dr. J. Y. Simpson says of it, "The power, however, which we have with it, of bringing down the pulse, etc., shows that if exhibited in too strong a dose given uninterruptedly, for too great a length of time, it would doubtless produce serious consequences, and even death."

THE VEGETABLE ANÆSTHETIC.

But there is

No danger in what show of sleep it makes
More than the locking up the spirits for a time
To be more fresh, reviving.

—*Shakespeare's Cymbeline.*

* Unsafe for inhalation, and only used for local anæsthesia.

The need for some safer anæsthetic than nitrous oxide, ether, or chloroform has long been felt, and the desideratum has been sought through various modifications of these substances.

Different ingredients have been added from time to time, with the hope of rendering them entirely safe as anæsthetics. The result is thus summed up by one of the most eminent surgeons, Dr. Turnbull, of Philadelphia :—

“Whatever mixture is employed, nothing will obviate the necessity of care in the administration, . . . for, like all potent medicines which we employ, *an excessive dose is sure to kill.*”

Schiff (l'Imparziale) arrived at the following conclusion, after more than five thousand experiments : “Chloroform can cause death at the first inspiration. Ether is safer and less dangerous.”

Knowing these facts with regard to both ether and chloroform, and having learned from a long experience in his profession the inconvenience of using nitrous oxide, on account of the excitement produced by it upon the patient at the time when it is most necessary that he should be kept quiet, Dr. Mayo spent much time in seeking to discover an anæsthetic that should be free from these objections and dangers. Among his first experiments were those of passing nitrous oxide through ether, and also through chloroform. Finding these of no avail, he next passed the gas through whiskey, and then through alcohol somewhat reduced. But these processes yielded no satisfactory result. Finally, he began to try experiments with various vegetable compounds, and after repeated combinations and changes,

both as to kind and proportions, the vegetable anæsthetic was discovered in April, 1883.

It has since been used exclusively by Dr. Mayo in his large dental practice. It works like a charm, being applicable to all classes and conditions, to the child as well as to the adult, and to the most delicate and sensitive woman as well as to the strong and hardy man; also to persons having a tendency to heart affection and pulmonary diseases, and in every case the patient returns quickly to sensibility and perfect comfort.

Although so recently discovered, it is being used by the leading dentists all over the union, and highly endorsed by prominent physicians and surgeons who have performed various surgical operations successfully, while their patients were under its influence, and its superiority over ether, chloroform and nitrous oxide gas, has been forever demonstrated. Already it has been tested by over 200,000 patients in New England, and in no instance has there been a single failure to give perfect satisfaction. It is crowned with brilliant success, and is pronounced to be perfectly safe, effective, and reliable. None of the objectional features peculiar to the other anæsthetics present themselves. On the contrary, it builds up the tissues, quickens the circulation, and adds oxygen to the system. The properties of the herbs from which it is manufactured are hypnotic, diaphoretic, stimulative, and anti-spasmodic. The patient awakens from the sleep refreshed and invigorated, and reports the sensations and effects as most agreeable.

One of the leading religious papers of this country, *Zion's Herald*, gives gratuitously and unsolicited the following excellent notice of this new discovery. We

copy the editorial entire from the issue of August 8, 1883.

ONE OF THE MARVELS OF THE HOUR.

Some years ago the accomplished Christian physician of the institution in which we held the office of chaplain, died, after a lingering and very painful sickness, of Bright's disease. Language cannot adequately describe the agony which he suffered at times, and which could only be temporarily relieved by anæsthetics. The Doctor had been for years a Christian believer, and greatly enjoyed religious exercises in his room during his confinement. One day we asked him if there were any special petitions in his behalf which he desired to have offered in our prayers. With the utmost feeling, as if he had been revolving the subject in his own thoughts, he answered, "Thank God for me for the discovery of anæsthetics!" We could readily appreciate both his gratitude and his earnestness.

One can hardly conceive now how the practice of surgery could have been successfully followed before the wonderful discovery of modern times. Indeed, many of the particularly delicate and dangerous operations, now successfully performed, could not have been undertaken before this strange power of producing temporary insensibility had been discovered. The surgeon's table has been shorn of its chief horror by this great discovery. The serious drawback, however, has been the danger of breathing some of these powerful mineral compounds, the many instances of death ensuing from their use, and the very disagreeable after effects of their inhaling when consciousness returned. Physicians have hesitated to advise their use by their patients except in grave cases

and especially have shrunk from administering them to young children.

We speak modestly, as a layman and not an expert in medicine, but if we can trust our own observation and personal experience, and the testimony of several intelligent physicians, Doctor U. K. Mayo, a well-known dentist of this city, of long practice, has made a discovery which obviates all these objections, makes the inbreathing of an anæsthetic vapor both agreeable and safe, produces absolute insensibility to pain, can be continued long enough to permit the most delicate operations, preserves the pulse at its normal condition (a little higher than usual, perhaps), and admits of immediate recovery from its influence without any sense of nausea or dizziness.

By the request of the Doctor, having some professional work to be performed by him to be preceded by the removal of two teeth, we submitted to a personal test of his late discovery. His anæsthetic, as he states it, is purely vegetable, while others are mineral. There was nothing unpleasant in the preliminary inhaling of the mediated atmosphere. Inclined to watch every movement and symptom, we were so thoroughly awake to what was going on, that we strongly harbored a doubt of the success of the experiment. It seemed only an instant, however, from the conscious thought of possible failure to the hearing of the Doctor's voice, bidding us relieve our mouth of the blood, and seeing the offending members lying upon the table; nothing but sight or touch could convince us that the operation had been performed. There was not the slightest unpleasant feeling with the return of consciousness. Indeed it was

quite difficult to believe that any period of unconsciousness had ensued, or that the painful work had been accomplished.

We stood afterwards by the chair while a little girl of eight or ten years sat in it to have two terrible teeth, which were deforming her mouth, removed. It was an operation that required, apparently, all the strength of the powerful operator, and could hardly have been endured, or even witnessed by spectators, if the little subject had been conscious of the terrible wrench. She dropped into quiet, after breathing a few seconds, and at its close said she had felt no pain. . . .

One very grave operation has been performed under the use of the new anæsthetic. A tumor upon the back of a patient, which, when removed, weighed two and three-quarters pounds, was taken away by a surgeon in the presence of several physicians, while the subject was under the influence of the vapor of this mixture. The operation required twenty-eight minutes in its performance; it was both delicate and dangerous, and the patient was conscious of no pain, experienced no injury from his long inhaling of the anæsthetic, and very rapidly recovered from its effects.

If this Vegetable Anæsthetic Mixture, as it is termed in the patent which has been taken out for it in Washington, proves all that it now promises to be, it will create quite an era in the medical, or at least surgical, practice of the day. The safety of its administration already draws a large number of children to the Doctor's rooms, from whom both the terror and agony of tooth-drawing are removed by this very kindly process. But it looks now as if the danger which has invested the use

anæsthetics in many cases has been effectually removed, and that the surgeon may safely at all times call to his aid and that of his patients this wonderful angel of mercy. The Doctor freely offers his new appliance to the examination and experiment of the medical profession; and while he, of course, sees in it the promise of much financial benefit, he is very enthusiastic as to the providential nature of its revelation to himself, and the blessed boon it must become to suffering humanity, and especially to little children. We trust it may prove another and an effective step in the advancement of the healing science, so many of which have been made in the present century.—*Zion's Herald*, Wednesday, August 8, 1883.

In June, 1883, the Vegetable Anæsthetic was first used in a surgical operation, in the excision of a tumor weighing two pounds and three-quarters from the back of Dr. J. D. Moore. We give below Dr. Moore's personal statement of the case.

STATEMENT OF DR. MOORE.

Some twelve years since, whilst taking a sponge bath in front of a mirror, I accidentally discovered a small protuberance upon my left shoulder, about the size of half a hen's egg. Not knowing what it was, and thinking it was but temporary and would pass away, I took no further notice of it.

Years passed on, and finally friends began to notice it, and would occasionally speak to me about it. At last I decided to have it removed, but business prevented me from fixing any time from the operation till some two years since, when I called upon the Superintendent of the Massachusetts Hospital and asked him if he would

remove the tumor without my inhaling any anæsthetic, as my heart was sometimes irregular in its pulsations. I received a decided but courteous reply in the negative. In the meantime the tumor continued to increase rapidly in size, until it was as large as a quart bowl. Finally, I decided in May last to go to the Massachusetts Hospital, take the risk of inhaling ether, and have the operation performed.

About this time I heard of the new anæsthetic lately discovered by Dr. U. K. Mayo, the eminent dentist of 378 Tremont Street. I waited upon Dr. M., and intimated to him my desire to inhale his vapor in preference to ether, chloroform or nitrous oxide, should I find it upon investigation, to be safe and reliable. He at once gave me every facility for witnessing its effects upon his numerous patients, young and old, well and ill, in extraction of teeth. Having thus seen "many times and oft," its magic power in that direction, I requested the Doctor to administer the vapor to me, and hold me some five minutes. He readily complied with my wish, and I was unconscious six minutes. Feeling no ill effects from it, I called the next day, and requested to be allowed to inhale the vapor again; and was, this time, unconscious eight and a half minutes, with the same pleasing results as before.

In the meantime I had engaged Dr. Thorndike, of 92 Boylston Street, one of our most eminent surgeons, to remove the tumor whenever I might be ready. He informed me that the operation would require ten to twelve minutes only.

I subsequently inhaled the vapor again and was unconscious eleven and a half minutes, and would have been gone longer, but by an oversight the vapor was ex-

hausted. As before, my pulse which had been slightly accelerated, almost immediately assumed its normal condition.

With the results of my experience and observation before me, I at once notified the surgeon that I was ready. Twice I had told him of the new anæsthetic, its effects upon me, and my intention to inhale it instead of ether. As he had signified a willingness to perform the operation at any room I might desire, I chose to go directly to Dr. Mayo's dental office, where, at half-past one P. M., June 28, Dr. Thorndike met me, and as soon as preparations could be made, I was put under the influence of the vapor. Dr. T., being wholly unacquainted with the nature of the new anæsthetic (never having seen it inhaled by any one), had evidently but little faith in its efficacy, and like a good cautious surgeon as he is, brought with him, to the operating-room, his ether and sponges, prepared for any emergency. I was entirely unconscious twenty-six minutes. It was twenty-two and a half minutes from the time the Doctor made the first incision till the wound was dressed.

When I recovered consciousness, there was no nausea, no headache or pressure about the temples. In a word, I was in my normal condition, except a slight increase of the pulse, which in a few minutes assumed its wonted beat.

When all was over, I retired to my room and immediately wrote a six-page letter, and slept soundly that night. On the sixth day after the operation, I went out of town to celebrate, with some friends, the Fourth of July, and have not experienced the least ill effects, either from the inhalation of the new anæsthetic or from passing through the hands of the surgeon, and judging from

my experience, I can see no reason why I might not have been held unconscious for an hour or more with similar results.

STATEMENT OF DR. THORNDIKE.

BOSTON, August 15, 1883.

This certifies that I removed in the back of Mr. J. D. Moore a tumor weighing two pounds and three-quarters. It was situated over the left Scapula. The time occupied in removing it, and in dressing the wound, was twenty-two minutes. The patient was insensible during the whole operation, and came out from the influence of the anæsthetic speedily and perfectly, without nausea or any ill effects. The agent used was prepared by Dr. U. K. Mayo, the dentist, who claims that it is a new discovery of his own.

WM. H. THORNDIKE, M. D.,
92 Boylston Street.

The following additional testimonial was subsequently received from Dr. Wm. H. Thorndike: "I consider this anæsthetic the safest the world has yet seen." J. S. B.

TESTIMONIALS.

OFFICE OF JAMES F. BABCOCK,
Analytical and Consulting Chemist, State Assayer and Inspector of Liquors: late Professor of Chemistry in Boston University and Massachusetts College of Pharmacy.

4 STATE ST., BOSTON, Jan. 15, 1885.

BOSTON VEGETABLE ANÆSTHETIC Co.:

GENTLEMEN,—Have made a chemical examination of the contents of a cylinder containing one hundred gallons of the anæsthetic manufactured by your company, and find that the same consists of a basis of nitrous oxide, combined with the volatile active principles of several well known vegetable anodynes and sedatives, which are calculated to increase its efficiency. I find

the anæsthetic to be free from *chloroform* (which has sometimes been detected in compressed gas), and that it is likewise free from any dangerous or objectionable constituents. I cheerfully recommend this anæsthetic to dentists and others, as worthy of general confidence.

Respectfully,

JAMES F. BABCOCK.

I have administered in my office, during the past year, the Vegetable Anæsthetic, and am satisfied that it is better than any other now in use for all dental and minor surgical operations.

DAVID S. FOGG, M. D.,

Member of M. M. S. & A. M. Association.

A DELICATE CASE.

DR. U. K. MAYO:

DEAR SIR,—I wish to express to you the pleasure and entire satisfaction afforded me by your administration of the Vegetable Anæsthetic in the case of the infant seven months old, upon which I operated at your office yesterday. Although it occupied over fifteen minutes, you kept the child insensible to pain. With the advantage of perfect safety and entire absence of disagreeable after-effects, the Vegetable Anæsthetic certainly ought to be preferred to any other. I thank you for the opportunity of testing and proving its merits.

You s, truly,

L. A. PHILLIPS, M. D.,

Jan. 18, 1885.

165 Boylston St., Boston.

We have used the Vegetable Anæsthetic over a year exclusively in our practice, both for extraction of teeth and minor surgical operations, repeatedly in heart disease, severe lung diseases, Bright's disease, etc., etc., where patients were so feeble as to require assistance in walking, many of them under medical treatment, and the results have been all we could ask. No irritation,

suffocation, nor depression. We heartily recommend it to all as the anæsthetic of the age.

FRIZZELL & WILLIAMS, Dentists,

January, 1885.

Lee Hall, Lynn, Mass.

My wife has a pulmonic affection of several years, standing, and is in a very enfeebled condition; her lungs are so badly disorganized that the administration of ether or gas would be entirely unsafe. In this condition of affairs, she having an ulcerated tooth to extract, I was induced to employ the Vegetable Anæsthetic. The result was one of entire success, the recovery being immediate and absolute.

H. B. MORRILL, M. D., Boston.

I give your anæsthetic in cases where I dare not administer other agents. A physician of this place who has witnessed its applications in my office brought a child, under two years, who fell and broke four teeth. She inhaled the vapor eight times. When I extracted the roots she awoke with scarcely a cry, apparently relieved of all suffering, and has since improved in health. Recently I administered it three times to a gentleman who has been in the hospital for over a year for treatment of the heart. He recovered as quickly and nicely as any one. My experience of its beneficial use enables me to heartily recommend it to all as the best anæsthetic known.

Dr. E. C. GILMAN, Dentist, Amesbury, Mass.

This certifies that the undersigned took an infant fifteen months old into the office of Dr. E. C. Gilman, Dentist, for the purpose of having four broken teeth extracted. We considered it advisable to administer "*Mayo's Vegetable Vapor*," which was done, and the roots removed, the child passed under its influence VERY EASILY, and RECOVERED SPEEDILY without a single disagreeable sign or symptom. I have also seen it administered in a number of other cases, every time successfully.

C. S. STANLEY, M. D., Salisbury, Mass.

Have been in the practice of surgery thirty-eight years, and have used the various anæsthetics in common use during that time, but I have never found anything equal to "Mayo's Vegetable Anæsthetic." In my judgment it is superior to anything now in use in this country.

P. DYER, M. D., Farmington, Me.

The use of the new Vegetable Anæsthetic has proven to me that is worthy of the attention of the profession, and the only way to find out whether it is to be accepted as a good thing, or condemned as a bad, is for the best men in the profession to try it.

F. A. COOK, D. D. S.,
Hoffman House, Boston.

Have used your anæsthetic for some time and am pleased to say that I have found it very satisfactory.

FRANK PERKIN, D. M. D.,
Boston, Mass.

The Vegetable Anæsthetic produces complete insensibility to pain with no disagreeable after-effects.

A. W. K. NEWTON, M. D., Boston.

I am doing splendid with your new anæsthetic. It is liked by all my patients and is a perfect success. I would not be without it a single day in my practice.

CARLTON KIMBALL, D. D. S.,
Portland, Me.

I confidently recommend the Vegetable Anæsthetic. It is the best and most pleasant anæsthetic that science has produced. Drs. Peltier and Wolf of this city have just performed a surgical operation in my office under its influence, and pronounced it a perfect success.

J. L. HITCHCOCK, D. D. S.,
Hartford, Conn.

I am much gratified with the results obtained from your new anæsthetic. It is very quieting, and the patients are delighted with the sleep. No choking at the

commencement, and they do not change color while inhaling. I should give up the use of gas if I had to go back to the old nitrous oxide.

DR. J. FRANK NEWMAN, Dentist, Boston.

After nine months' experience in the use of your Vegetable Anæsthetic, I cannot speak too highly of its merits. It is effective, reliable and safe; it gives perfect satisfaction and delights my patients.

Yours,

DR. A. W. HOWARD, Dentist,
Tremont St., Boston.

Have used the Vegetable Anæsthetic for some time with the most pleasant results.

E. C. MERRILL, Dentist,
Farmington, Me.

I am highly pleased with the results obtained from your Vegetable Anæsthetic.

E. B. ABBEY, D. D. S.,
New Britain, Conn.

I am perfectly delighted with this new discovery; it is infinitely superior to all other anæsthetics.

REV. W. KIRBY, Colchester, Conn.

Having used the Vegetable Anæsthetic in my city and suburban offices, am pleased to say I consider it far superior to nitrous oxide gas; it produces a more effectual coma, and is preferable to ether by its avoidance of nausea.

DR. FREDERICK S. BASTION, Dentist,
68 Dover St., Boston.

I am very much pleased with your new anæsthetic. I kept a patient under its influence, *easily*, long enough to extract twenty (20) teeth.

J. W. TYLER, Surgeon Dentist,
Bristol, Conn.

It gives me and my patients the greatest satisfaction. A prominent surgeon here has performed several operations under its influence with complete success.

DR. THOS. A. FANNING, Dentist,
Hartford, Conn.

It is the mildest and at the same time the most effectual anæsthetic known to the profession.

DR. F. D. GILMORE, Dentist,
Northboro, Mass.

This new discovery is perfectly harmless and pleasant to inhale; quick in its effects, and absolutely without danger in its action.

DR. O. P. ROGERS, Dentist,
Woburn, Mass.

LATEST TESTIMONIALS.

I cannot say too much in favor of the superiority of the Vegetable Anæsthetic prepared by the "Boston Vegetable Anæsthetic Co.," and having used it constantly in my practice since January last, and for the *very* worst of cases, many of whom were forbidden by their physicians to take either or nitrous oxide gas and in *every* case I have had the greatest satisfaction, not only during the operation but in beneficial effects experienced by my patients afterwards. I have also administered it to a patient of Dr. P. B. Carpenter of this city for the delicate operation of the removal of three tumors of the eyelid, giving perfect satisfaction to all parties. My confidence and appreciation of this Vegetable Anæsthetic increases, and I hope the day is not far distant when it will be used in every dental office.

T. FRANK SPENCER, D. D. S.,

Apr. 22, 1885.

Providence, R. I.

In my experience with your Vegetable Anæsthetic I

am pleased to tell you that it has proved very satisfactory. I consider it safe, agreeable, and effective.

CHAS. L. STRICTLAND, D. D. S.

April, 1885.

31st St., and 6th Ave., N. Y.

AUBURN, ME., Apr. 21, 1885.

DR. U. K. MAYO :

DEAR SIR,—I cannot find words to express my pleasure and satisfaction for the discovery you have made in your new Vegetable Anæsthetic, from the fact of my having a seated heart trouble. I have always dreaded taking any anæsthetic, but this I inhale and administer freely, and heartily recommend it.

Truly yours,

H. W. FIELD, Dentist.

HAVERHILL, MASS., May 29, 1885.

DR. MAYO :

MY DEAR SIR,—Recently, Dr. I. E. Chase, a prominent physician of this city, brought a lady patient to my office, to be put under the influence of "Mayo's Vegetable Vapor" while he removed a tumor from her neck. By allowing the patient to breathe air—accordingly as her anæsthetic condition permitted—after inhalation of the "Vapor." I easily placed and held the patient *at will*, in an *utterly unconscious condition*, which lasted twenty minutes; while Dr. Chase skilfully and successfully removed the tumor which would fill up a coffee-cup, and sewed up the wound. The patient during the operation inhaled fifty gallons of "Vapor" and the anæsthesia, while far more satisfactory, was as perfect as that produced by Ether. The doctor expressed himself as highly pleased with the effects of the "Vapor," and the promise of its successful use in surgical operations. While the results following the use of the "Vapor," was a decided improvement and advance over a former experience of the patient with Ether. After several months, use of the "Vapor" in my prac-

tice I consider its anæsthetic power an improvement over the common inhaling "Gas."

WM. W. RUSSELL, D. D. S.

I recently removed a tumor from the neck of a patient while she was under the influence of Dr. Mayo's "Vegetable Anæsthetic," administered by Dr. W. W. Russell. She had been very unfavorably affected by the administration of Ether previously, but the "Anæsthetic" produced complete insensibility with no disagreeable effects, during or after its administration. I am highly pleased with the results, both in this and a subsequent case of its personal use.

J. E. CHASE, M. D.

May 30, 1885.

Haverhill, Mass.

BOSTON, June 3, 1885.

This certifies that I performed an operation on the rectum of a patient while he was under the influence of gas made and administered by Dr. U. K. Mayo. The patient was perfectly insensible during the operation, which lasted several minutes, and speedily recovered with no unpleasant effects. I was pleased and satisfied with the Anæsthetic, and think it is likely to be preferred to Ether in many cases of surgery, and bids fair to rival it altogether.

D. W. JONES, M. D.,
Boylston St.

DR. U. K. MAYO :

DEAR SIR,—In reply to your inquiry, I may state I have used your Vegetable Anæsthetic for over two years, exclusively, in my practice. I must say it has given perfect satisfaction to myself and patients, and above all it is perfectly harmless, and I cannot speak too highly of its superior merits as an anæsthetic.

Respectfully yours,

H. D. ROWE, D. D. S.,

Jan. 25, 1886.

Brewster, Mass.

I have used the Vegetable Anæsthetic since its introduction. It has proved to be all that is claimed for it. In the large number of cases in which it has been employed, not a single failure or unsatisfactory result has been recorded. Every patient has been pleased with the success attending its administration.

W. H. TILLINGHAST, D. D. S.,
220 Westminster St., Providence, R. I.

Boston, January, 1886.

This is to certify that we prepare, from the formula, the ingredients used in the manufacture of the Vapor known as the Boston Vegetable Anæsthetic, and guarantee the same to be free from Chloroform, Ether, or other similar dangerous drugs.

B. O. & G. C. WILSON,
Wholesale Botanic Druggists,
28 Merchants' Row, Boston, Mass.

PRESS TESTIMONIALS.

The following testimonial is copied from the *American Journal of Dental Science* paper read by Dr. E. Parsons, Savannah, Ga., before the Georgia State Dental Society, May, 1885.

"I have long desired a perfectly safe anæsthetic that can be administered, no matter what the condition of the patient. I am now creditably informed that Dr. Mayo, of Boston, some eighteen months ago, by various experiments, produced a compound article that satisfied him was harmless. He would not put it on the market until it had been thoroughly tested by both dentists and surgeons. All who tested its effects and efficiency testified to its great superiority over all known anæsthetics for dental and minor surgical operations. It is now only a few monthssince he made arrangements for its

manufacture and appliances, and put it on the market. He has named it "Mayo's Vegetable Vapor Anæsthetic." I have been using it for extracting teeth very successfully. The nitrous oxide causes the patient when fully under its influence to have very like the appearance of a corpse. The action of this new anæsthetic does not act on the vital organs, and the patient appears like one in a natural sleep, and, in my opinion, is perfectly safe, and without danger to life or health."

A NEW ANÆSTHETIC.—A company is now formed for the general introduction of Dr. U. K. Mayo's Anæsthetic. Dentists that have used it commend it highly, and say that it is bound to become very popular.—*Boston Evening Traveller*.

No ill effects have followed its use, it acting rather as a vegetable tonic.—*Portland (Me.) Argus*.

It controls the patient longer than gas, and is much safer.—*Portland (Me.) Globe*.

Both parents and children may need all the self-restraint they can command to resist a too frequent indulgence in this dreamy, toothsome or toothless pleasure.—*Christian Register*.

A number of our leading citizens are loudly proclaiming the merits of a new discovery of a Vegetable Anæsthetic.—*The Cape Elizabeth Sentinel*.

This new anæsthetic produces absolute insensibility to pain, is safe and has no ill effects.—*The Christian Advocate*.

It is claimed for Dr. U. K. Mayo's anæsthetic discovery, that while it has the required properties of ether, chloroform and nitrous oxide, it lacks the disagreeable and dangerous qualities of these drugs. It is certainly

a boon to suffering humanity to be relieved of the nausea too often following the administering of sedatives of the old schools.—*Boston Transcript*.

A great many people claim that it is an act of cowardice to court insensibility by the use of anæsthetics when under surgical or dental treatment, and a long array of authorities assert that such a course is but tempting fatal issue by heart disease or asphyxia. The first is certainly not a tenable theory, and happily all controversy over this second argument is merged in astonishment at the announcement that comes from Dr. U. K. Mayo, dentist, No. 378 Tremont Street. This savant has invented a compound vegetable anæsthetic, which, while producing a comatose state, is attended by none of the dangerous possibilities that follow the use of ether and kindred drugs.—*Boston Post*.

Dentists in all parts of the country have been not only surprised, but delighted, and we hazard nothing in saying that the name of Mayo will stand high on the scroll of fame, alongside those of Jenner and Morton, long after the good old doctor has passed "over the river" to join the great majority. What are "jasper walls" and "golden pavements" to the unselfish joy a spirit may feel that can look down upon a noble work continued long after the active brain and cunning hand are cold and silent? Our readers may think we are extravagant, but what praise is too great for him who mitigates human pain? Does not the world hold in honor its benefactors?—*New York Scientific Times and Mercantile Register*.

While "Testimonials" furnish a satisfactory evidence to the value of the Vegetable Anæsthetic, no better as-

surance can be given than the business of the Company. For information as to prices, etc., address, Boston Vegetable Anæsthetic Co., 15 Harvard Place, Boston, Mass.

NOTICE.

TO ALL WHOM IT MAY CONCERN.

The Boston Vegetable Anæsthetic Company are the sole proprietors and manufacturers of the new "Vegetable Anæsthetic" for which letters patent have been granted. Understanding that unscrupulous parties are placing on the market a SPURIOUS ARTICLE, they hereby caution all persons against selling, buying, or administering any gas or vapor, purporting to be manufactured from herbs.

Any infringement of their rights will be punished with the utmost vigor of the law. The only agents in Boston are Messrs. Codman & Shurtleff, 167 Tremont Street, Hood & Reynolds, 74 Tremont Street, and at the laboratory of the company, 15 Harvard Place.

Boston Vegetable Anæsthetic Company.

January 11, 1886.

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Boston, Feb. 26, 1885

Dr. Tillinghast of 220 Westminster St., Providence, R. I., has the special apparatus for administering the Vegetable Anesthetic in its purity, and we cheerfully recommend him as being well versed in the giving of anesthetics.

BOSTON VEGETABLE ANESTHETIC CO.

W. H. TILLINGHAST, D. D. S.

220 Westminster St. Providence, R. I.

Fine Filling and all operative work a specialty. Faulty operations in this department are very common and many times necessitate artificial sets years too soon. Advice regarding the preservation of the Natural Teeth always cheerfully given. All kinds of Plate work made. Continuous Gum on Platina Plate fitted with utmost care. Teeth specially carved for partial sets and mounted upon gold. Teeth extracted and Necrosis, Fistula, Abscesses, etc., treated without pain. Inquiries by mail receive careful and prompt attention.

